


What is claimed is:

1. A solid of formula $\text{BiOI} \cdot (\text{BiOX})_j \cdot (\text{BiOL})_k$ wherein

X is Cl, Br, F or a mixture $(\text{Br})_m(\text{Cl})_n(\text{F})_o \times \frac{1}{m+n+o}$,

L is CN, NC, NCO, NCS, O-Z, S-Z or a mixture of different CN, NC, NCO, NCS,
5 O-Z and/or S-Z,

Z is COR_1 , COOR_1 , CONR_1R_2 , CN, CSR_1 , COSR_1 , CSOR_1 , SO_2R_1 , SO_3R_1 , ,

or $\text{C}_6\text{-C}_{24}\text{aryl}$ or $\text{C}_2\text{-C}_{24}\text{heteroaryl}$ each unsubstituted or mono- or poly-substituted
by halogen, NO_2 , CN, NR_3R_4 , $\text{NR}_3\text{R}_4\text{R}_5^+$, NR_5COR_3 , $\text{NR}_5\text{CONR}_3\text{R}_4$, R_3 , OR_3 , SR_3 ,
CHO, $\text{CR}_5\text{OR}_3\text{OR}_4$, COR_3 , SO_2R_3 , SO_3^- , SO_3R_3 , $\text{SO}_2\text{NR}_3\text{R}_4$, COO^- , COOR_3 ,

10 CONR_3R_4 , PO_3^- , $\text{PO}(\text{OR}_3)(\text{OR}_4)$, $\text{SiR}_5\text{R}_6\text{R}_7$, $\text{OSiR}_5\text{R}_6\text{R}_7$ and/or by $\text{SiOR}_5\text{OR}_6\text{OR}_7$;

j is a number from 0 to 4, preferably from 0.5 to 1.2, and

k is a number from 0.005 to 3, preferably from 0.05 to 2, especially from 0.1 to 1;

m, n and o are each a number from 0 to 10^6 , but m, n and o are not all

simultaneously 0; preferably, m is 10^6 and n and o are from 0 to 10^5 ; especially, n
15 is from 0 to 10^4 and o is from 0 to 10^2 ;

R_1 being $\text{C}_3\text{-C}_{24}\text{alkyl}$, $\text{C}_3\text{-C}_{24}\text{alkenyl}$, $\text{C}_3\text{-C}_{24}\text{alkynyl}$, $\text{C}_3\text{-C}_{24}\text{cycloalkyl}$,

$\text{C}_3\text{-C}_{24}\text{cycloalkenyl}$ or $\text{C}_2\text{-C}_{12}\text{heterocycloalkyl}$ each unsubstituted or mono- or poly-
substituted by halogen, NO_2 , CN, NR_3R_4 , $\text{NR}_3\text{R}_4\text{R}_5^+$, NR_5COR_3 , $\text{NR}_5\text{CONR}_3\text{R}_4$,

OR_3 , SR_3 , OBiO , SBiO , COO^- , COOH , COOR_3 , CHO, $\text{CR}_5\text{OR}_3\text{OR}_4$, COR_3 , SO_2R_3 ,

20 SO_3^- , SO_3H , SO_3R_3 and/or by $\text{OSiR}_5\text{R}_6\text{R}_7$ or being $\text{C}_6\text{-C}_{24}\text{aryl}$, $\text{C}_7\text{-C}_{24}\text{aralkyl}$,

$\text{C}_8\text{-C}_{24}\text{aralkenyl}$ or $\text{C}_2\text{-C}_{24}\text{heteroaryl}$ each unsubstituted or mono- or poly-

substituted by halogen, NO_2 , CN, NR_3R_4 , $\text{NR}_3\text{R}_4\text{R}_5^+$, NR_5COR_3 , $\text{NR}_5\text{CONR}_3\text{R}_4$, R_3 ,

OR_3 , SR_3 , CHO, $\text{CR}_5\text{OR}_3\text{OR}_4$, COR_3 , SO_2R_3 , SO_3^- , SO_3R_3 , $\text{SO}_2\text{NR}_3\text{R}_4$, COO^- ,

COOR₃, CONR₃R₄, PO₃⁻, PO(OR₃)(OR₄), SiR₅R₆R₇, OSiR₅R₆R₇ and/or by

25 SiOR₅OR₆OR₇;

R_2 , independently of R_1 , being hydrogen or R_1 , it being possible, if desired, for R_1 and R_2 to be linked to one another by means of a direct bond or a bridge $-O-$, $-S-$ or $-NC_1-C_8\text{alkyl}-$ so that altogether a five- or six-membered ring is formed;

R_3 and R_4 being each independently of the other hydrogen, CN, OR_5 , COO^- ,

- 5 $COOH$, $COOR_5$, $CONR_5R_6$, COR_5 , SO_2R_5 , SO_3^- , SO_3H , SO_3R_5 or $OSiR_5R_6R_7$; or $C_1-C_{24}\text{alkyl}$, $C_2-C_{24}\text{alkenyl}$, $C_2-C_{24}\text{alkynyl}$, $C_3-C_{24}\text{cycloalkyl}$, $C_3-C_{24}\text{cycloalkenyl}$ or $C_2-C_{12}\text{heterocycloalkyl}$ each unsubstituted or mono- or poly-substituted by halogen, NO_2 , CN, NR_5R_6 , $NR_5R_6R_7^+$, NR_5COR_7 , $NR_5CONR_6R_7$, OR_5 , SR_5 , COO^- , $COOH$, $COOR_5$, CHO , $CR_5OR_6OR_7$, COR_5 , SO_2R_5 , SO_3^- , SO_3H , SO_3R_5 and/or by
- 10 $OSiR_5R_6R_7$; or $C_7-C_{18}\text{aralkyl}$, $C_6-C_{14}\text{aryl}$ or $C_2-C_{13}\text{heteroaryl}$ each unsubstituted or mono- or poly-substituted by halogen, NO_2 , CN, NR_5R_6 , $NR_5R_6R_7^+$, NR_5COR_6 , $NR_5CONR_6R_7$, R_5 , OR_5 , SR_5 , CHO , $CR_5OR_6OR_7$, COR_5 , SO_2R_5 , SO_3^- , $SO_2NR_5R_6$, COO^- , $COOR_7$, $CONR_5R_6$, PO_3^- , $PO(OR_5)(OR_6)$, $SiR_5R_6R_7$, $OSiR_5R_6R_7$ and/or by $SiOR_5OR_6OR_7$,
- 15 or NR_3R_4 being a five- or six-membered heterocycle which may optionally contain a further nitrogen or oxygen atom and which may be mono- or poly-substituted by $C_1-C_8\text{alkyl}$; and

R_5 , R_6 and R_7 being each independently of the others hydrogen, $C_1-C_{20}\text{alkyl}$, $C_2-C_{20}\text{alkenyl}$, $C_2-C_{20}\text{alkynyl}$, $C_7-C_{18}\text{aralkyl}$, $C_6-C_{14}\text{aryl}$ or $C_2-C_{13}\text{heteroaryl}$, it being

20 possible, if desired, for R_5 and R_6 and/or R_6 and R_7 to be linked to one another by means of a direct bond or a bridge $-O-$, $-S-$ or $-NC_1-C_8\text{alkyl}-$ so that altogether a five- or six-membered ring is formed.

2. A solid according to claim 1, wherein Z is CN, COR_1 , SO_3R_1 , $\begin{array}{c} R_3 \\ \diagup \\ R_1 \end{array}$ or

- unsubstituted or substituted $C_6-C_{24}\text{aryl}$, especially COR_1 or SO_3R_1 ; R_1 is
- 25 unsubstituted or substituted $C_3-C_{24}\text{alkyl}$, $C_3-C_{24}\text{alkenyl}$, $C_6-C_{24}\text{aryl}$ or $C_8-C_{24}\text{aralkenyl}$; R_3 and R_4 are each independently of the other hydrogen, CN, OR_5 ,

- COOR₅, CONR₅R₆ or COR₅, or unsubstituted or substituted C₁-C₂₄alkyl, C₇-C₁₈aralkyl or C₆-C₁₄aryl; or NR₃R₄ is a five- or six-membered heterocycle which may optionally contain a further nitrogen or oxygen atom and which may be mono- or poly-substituted by C₁-C₈alkyl; R₅, R₆ and R₇ are each independently of the others hydrogen, C₁-C₂₀alkyl, C₂-C₂₀alkenyl, C₂-C₂₀alkynyl or C₇-C₁₈aralkyl, it being possible, if desired for R₅ and R₆ and/or R₆ and R₇ to be linked to one another by means of a direct bond or a bridge —O—, —S— or —NC₁-C₈alkyl— so that altogether a five- or six-membered ring is formed; and R₅, R₆ and R₇ themselves may, if desired, be substituted.
- 10 3. A solid according to claim 2, wherein R₁ is C₆-C₂₄aryl or C₈-C₂₄aralkenyl each substituted by one, two or three radicals selected from the group consisting of OR₃, NR₃R₄ and NO₂.
4. A solid according to claim 1, 2 or 3, which is mainly or exclusively in the crystal lattice of bismuth halide.
- 15 5. A solid according to claim 1, 2, 3 or 4, wherein the sum j + k is from 0.1 to 3, preferably from 0.2 to 1.5 and the ratio m : n is from 3 : 2 to 5 : 1.
6. A process for the preparation of a bismuth oxyhalide by combining I⁻ and, optionally, X⁻ with a solution of BiO⁺ or Bi³⁺ ions in a solvent under conditions such that a solid which is insoluble in the solvent precipitates out, in which process L⁻ or
- 20 LH is present in the solvent during precipitation of the solid, and the solid precipitating out is of formula BiOI · (BiOX)_j · (BiOL)_k, wherein j is a number from 0 to 4, preferably from 0.5 to 1.2, and k is a number from 0.005 to 3, preferably from 0.05 to 2, especially from 0.1 to 1.
7. A process according to claim 6, wherein the precipitation is carried out at a pH of
- 25 from 1 to 9.
8. Platelets having a length of from 2 μm to 5 mm, a width of from 2 μm to 2 mm and a thickness of from 50 nm to 1.5 μm, the ratio of length to height being at least

- 5: 1, the ratio of width to height being at least 3 : 1, and the ratio of length to width being at most 5 : 1, which platelets are coated with a solid of formula $\text{BiOI} \cdot (\text{BiOX})_j \cdot (\text{BiOL})_k$, wherein j is a number from 0 to 4, preferably from 0.5 to 1.2, and k is a number from 0.005 to 3, preferably from 0.05 to 2, especially from 0.1 to 1.
9. Platelets according to claim 8, coated with from 1 to 1000 % by weight, preferably from 5 to 500 % by weight, especially from 10 to 200 % by weight, based on the uncoated platelets, of solid of formula $\text{BiOI} \cdot (\text{BiOX})_j \cdot (\text{BiOL})_k$.
10. A process for the coating of particles with bismuth oxyhalide by combining I^- and, optionally, X^- with a solution of BiO^+ or Bi^{3+} ions in a solvent under conditions such that a solid which is insoluble in the solvent precipitates out, in which process L^- or LH is present in the solvent during precipitation of the solid, and the particles are coated with a solid of formula $\text{BiOI} \cdot (\text{BiOX})_j \cdot (\text{BiOL})_k$, wherein j is a number from 0 to 4, preferably from 0.5 to 1.2, and k is a number from 0.005 to 3, preferably from 0.05 to 2, especially from 0.1 to 1.
11. A process according to claim 10, wherein the particles are in suspension in the solvent during precipitation of the solid.
12. A process according to claim 11, wherein the coating is carried out subsequently to preparation of the particles without intermediate isolation.
13. A substance composition comprising a solid according to claim 1, 2, 3, 4 or 5 or platelets according to claim 8 or 9 and also at least one further white, black, coloured or effect pigment.
14. A substance composition comprising a high molecular weight organic material and from 0.01 to 80 % by weight, preferably from 0.1 to 30 % by weight, based on the high molecular weight organic material, of a solid according to claim 1, 2, 3, 4 or 5 or platelets according to claim 8 or 9.